REMARKS

By this amendment, claims 1, 2, 4-11, 13-19, and 21-28 are pending, in which claims 1, 2, 4-8, 10, 11, 13-19, and 21-25 are currently amended, and claim 27 and 28 are newly presented. Claims 3, 12, and 20 were previously canceled. No new matter is introduced.

The Office Action mailed June 28, 2004 rejected claims 1, 9, 10, 18 and 26 under 35 U.S.C. § 102 based on *Demjanenko et al.* (US 20020150167), and claims 2, 11, and 19 as obvious under 35 U.S.C. § 103 based on *Demjanenko et al.* in view of *Antia et al.* (US 6,347,124). Claims 4-8, 13-17, and 21-25 were rejected under 35 U.S.C. § 112, 2nd paragraph as indefinite. Further, claims 9 and 26 were objected to.

In light of the amendment to the Specification, the objections to the Drawings and the Specification (Office Action, pages 2 and 3) are rendered moot.

With respect to the indefinite rejection, the Office Action indicated that "the Claims have not been further treated on the merits." Applicants respectfully submit that the informalities of 4-8, 13-17, and 21-25 are obvious in nature and should not preclude a reasonable search of the prior art by the Examiner. MPEP §702.01(A) states "A reasonable search should be made of the invention so far as it can be understood from the disclosure, objects of the invention and claims and any apparently pertinent art cited. In the rare case in which the disclosure is so incomprehensible as to preclude a reasonable search, the Office Action should clearly inform applicant that no search was made." Therefore, it is not understood why the examination on the merits of these claims have not been performed.

As regards claims 9 and 26, Applicants respectfully traverse the objection, as there is no rule of which Applicants are aware that precludes such dependencies.

Applicants acknowledge with appreciation the courtesy of a telephonic interview granted to Applicants' attorney on December 6, 2004 at which time the subject invention was explained in light of Applicants' disclosure. During the interview, the Examiner withdrew the objection to the Information Disclosure Statement. Claims 1 and 2 were discussed in light of the applied art. No formal agreement was reached, pending the Examiner's detailed reconsideration of the application upon formal submission of a response to the outstanding Office Action.

In the interest of advance prosecution, independent claims 1, 10, and 18 have been amended. Amended claim 1 recites "**writing _N_ encoded bits to a block interleaver on a column by column basis; reading out the encoded bits on a row by row basis**" and "outputting a symbol of the higher order constellation corresponding to the one set of bits based on the mapping for transmission **over an Additive White Gaussian Noise (AWGN) channel.**" Claim 10 now recites "wherein the _N_ **encoded bits are written to a block interleaver column by column and read out row by row**" and "wherein a symbol of the higher order constellation corresponding to the one set of bits is output based on the mapping for transmission **over an Additive White Gaussian Noise (AWGN) channel.**" Amended claim 18 recites "demodulating a received Low Density Parity Check (LDPC) encoded signal, **over an Additive White Gaussian Noise (AWGN) channel,** representing a codeword, wherein the encoded signal being modulated according to a non-sequential mapping, based on the structure of the codeword, of a plurality of bits corresponding to the codeword, **wherein the _N_ encoded bits are written to a block interleaver column by column and read out row by row.**"

The above amendment renders the § 102 rejection moot, as _Demjanenko et al._ fails to disclose "the exact structure of the Interleaver" (page 5 of the Office Action).

With respect to the obviousness rejection over the combination of _Demjanenko et al._ and _Antia et al._, Applicants submit that the features of "**writing _N_ encoded bits to a block interleaver on a column by column basis; reading out the encoded bits on a row by row basis**" and "outputting a symbol of the higher order constellation corresponding to the one set of bits based on the mapping for transmission **over an Additive White Gaussian Noise (AWGN) channel**" are absent from the combination.

As regard newly added claims 27 and 28, dependent claim 27 recites "wherein the mapping step is further based on type of higher order constellation." New claim 28 recites "wherein the codeword is structured to permit storage of adjacent edge values, associated with a group of bit nodes or a group of check nodes, together in memory." Because these new claims depend from amended independent claim 1, they are allowable for at least the reasons put forth for the allowability of claim 1. Further, such claims are allowable on their own merits.

Favorable consideration of this application is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 425-

8508 so that such issues may be resolved as expeditiously as possible. All correspondence should

continue to be directed to our below-listed address.

Respectfully submitted,

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